each cyclone being attended by a notable rise in temperature.

A closed cycle of changes in the distribution and sign of departures in air temperature, pressure, wind velocity, ocean current velocity, and coincident changes in the temperature of the Gulf stream and in air temperatures over northwestern Europe operates to maintain the *status quo* of one type of regime until some fundamental dynamical change brings a shift to another type.

The author cites three general conclusions of Meinardus relative to the effects of changes in the circulation in the northern North Atlantic Ocean, as follows:

At times of strengthened atmospheric circulation over that area, there result (*a*) a higher temperature of the Gulf stream [North Atlantic drift] along the European coast, (*b*) an amount of ice above normal on the Iceland coast, and (*c*) an amount of ice above normal on the Newfoundland coast, the Denmark-Iceland pressure gradient being used as an index to the atmospheric circulation. At times of weakened atmospheric circulation the reverse of these results is found.

The most striking relations of these and other conditions, to winter temperature in Siberia, are summarized as follows:

(1) Based on Petterson's determinations of conspicuous temperature departures of the Gulf stream along the coast of Norway:

Gulf stream warmer than normal		*Gulf stream colder than normal*	
Winter temperature anomaly in Siberia:	°C.	Winter temperature anomaly in Siberia:	°C.
1873–74	3.5	1874–75	−1.4
1881–82	3.2	1876–77	−2.0
1883–84	3.2	1878–79	−1.7
1886–87	2.1	1890–91	−0.7

(2) Sixty-five per cent of all cases of excess (*or deficient*) summer ice near Iceland (a result of increased atmospheric circulation) showed a plus ((*or minus*) temperature anomaly during the ensuing winter in Siberia.

(3) Seventy-five per cent of all cases of overnormal (*or subnormal*) pressure gradient between Denmark and Iceland coincided with a plus (*or minus*) winter temperature anomaly in Siberia. A 5 mm. increase of the gradient above normal for September–January corresponded with 1° C. plus anomaly; and a 3.6 mm. decrease below normal, with a 1° C. minus anomaly, for the Siberian winter.

(4) Eighty-five per cent of all cases of increase (*or decrease*) of the atmospheric circulation between the Azores and Iceland showed a plus (*or minus*) temperature anomaly.

(5) Seventy per cent of all cases of the Barents Sea summer ice limit, being farther south (*or north*) than usual, showed a minus (*or plus*) temperature anomaly. Decrease of 48′ in latitude corresponded to a lowering of the winter temperature in Siberia of about 0.5° C. and an increase of 1° C. to a raising of the temperature about 0.7° C.

(6) In 67 per cent of all cases an increase (*or decrease*) in the area of the ice-covered region corresponded with a minus (*or plus*) temperature anomaly, a warming of 0.5° taking place for each 280,000 km.² of decrease in ice area and a cooling of 0.4° for each increase of 321,000 km.²

(7) In 90 per cent of all cases a positive (*or negative*) temperature departure for November–February in the surface water of the Norwegian Sea corresponded to a positive (*or negative*) winter temperature anomaly in Siberia. An increase of surface water temperature of 0.5° corresponded to an increase of 1.5° in temperature in Siberia and a decrease of 0.5° to a decrease of 0.9°.

(8) In 76 per cent of all cases years of excess ice about Newfoundland coincided with warm winters in Siberia and years of deficient ice with cold winters.

The general conclusion is reached that anomalies in the hydrometeorological conditions of the Gulf Stream region show sufficient persistence to enable one to make practical use of them in forecasting the general nature of the winter in Siberia.—*B. M. V.*

ICE IN THE ARCTIC SEAS IN 1924

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The annual report of the Danish Meteorological Institute is fuller than usual, especially as regards the Kara and Barents Seas and the east coast of Greenland, but, owing to lack of information, is very meager concerning the Beaufort Sea and coasts of eastern Siberia. In European Arctic regions the year on the whole was marked by less ice than is the rule during the spring and summer. In August and September the Kara Sea was exceptionally free from ice. The White Sea was clear in June and in the autumn froze much later than usual. In the northeastern part of the Barents Sea there was more open water than usual; in August, the only month for which there are data, it came very near to Franz Josef Land. During April and May very heavy pack extended to the southwest of Spitzbergen so far south as Bear Island, but the northern part of the west coast, as usual, was clear. In June conditions changed completely, resulting in a summer with exceptionally little ice in Spitzbergen waters. A Norwegian sloop circumnavigated North-East Land during August. On the east coast of Greenland the few observations suggest a narrower belt of close pack ice than usual. Iceland was touched by pack ice only during February. The Newfoundland Banks had little ice and few icebergs, and Davis Strait was fairly clear. The report is illustrated with several maps.